

Attorney Docket No.: **ABLE-0021**
Inventors: **Secombes et al.**
Serial No.: **10/088,780**
Filing Date: **July 22, 2002**
Page 5

This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of the claims:

Claim 1: (currently amended) A composition for protection of an animal against a disease-causing agent, the composition comprising a non-infectious nucleic acid construct ~~encoding~~ which upon administration to the animal encodes a recombinant antibody to that agent, said non-infectious nucleic acid construct further comprising a gene sequence encoding a secretion signal peptide.

Claim 2: (previously amended) A composition according to claim 1 wherein the animal is selected from a mammal or a fish.

Claim 3: (previously amended) A composition according to claim 1 wherein the animal has a deficient immune system.

Claim 4: (previously amended) A composition according to claim 1 wherein the disease-causing agent is selected from a pathogen, an allergen or a toxic substance.

Claim 5: (previously amended) A composition according to claim 1 wherein the protection is prophylactic.

Claim 6: (previously amended) A composition according to claim 1 wherein the encoded recombinant antibody is derived from an antibody raised against the disease-causing agent.

Attorney Docket No.: **ABLE-0021**
Inventors: **Secombes et al.**
Serial No.: **10/088,780**
Filing Date: **July 22, 2002**
Page 6

Claim 7: (previously amended) A composition according to claim 1 wherein the encoded antibody molecule comprises variable domains of immunoglobulin Heavy and Light chain genes linked together by a linker sequence.

Claim 8: (canceled)

Claim 9: (previously amended) A composition according to claim 1 comprising genes encoding antibody molecules to several different epitopes of the disease-causing agent.

Claim 10: (previously amended) A composition according to claim 1 comprising a gene-expression library encoding antibodies to the disease-causing agent.

Claim 11: (previously amended) A composition according to claim 10 wherein the gene expression library encodes single-chain antibody molecules to the disease-causing agent.

Claim 12: (previously amended) A composition according to claim 1 wherein the encoded recombinant antibody is a virus-neutralising antibody.

Claim 13: (previously amended) A composition according to claim 12 wherein the encoded virus-neutralising antibody is single chain molecule.

Claim 14: (currently amended) A composition according to claim 1 including a nucleic acid construct encoding a viral

Attorney Docket No.: **ABLE-0021**
Inventors: **Secombes et al.**
Serial No.: **10/088,780**
Filing Date: **July 22, 2002**
Page 7

haemorrhagic septicaemia virus VHSV-neutralising monoclonal antibody 3F1H10 with two amino ~~acids~~~~substituents~~ acid substitutions in the H-chain gene respectively Asn 35a to Thr and Lys 64 to Thr and with the secretion signal of rainbow trout transforming growth factor (TGF-beta) added to the 5' end of the gene.

Claim 15: (previously amended) A composition according to claim 6 wherein when the disease-causing agent is an allergen the antibody molecule is derived from an antibody raised against IgE molecules.

Claim 16: (previously amended) A composition according to claim 1 wherein the nucleic acid construct is formed from DNA.

Claim 17: (previously amended) A composition according to claim 1 wherein the composition is in the form of a vaccine, dosage form, cream, ointment, liquid or paint.

Claim 18: (previously amended) A composition according to claim 17 wherein the composition is for delivery by injection, spray or gene gun.

Claims 19-20: (canceled)

Claim 21: (previously added) A composition for protection of an animal against a disease-causing agent, the composition comprising a non-infectious nucleic acid construct ~~encoding~~ which

Attorney Docket No.: **ABLE-0021**
Inventors: **Secombes et al.**
Serial No.: **10/088,780**
Filing Date: **July 22, 2002**
Page 8

upon administration to the animal encodes a recombinant antibody to that agent wherein the encoded antibody molecule comprises variable domains of immunoglobulin Heavy and Light chain genes linked together by a linker sequence, said non-infectious nucleic acid construct further comprising a gene sequence encoding a secretion signal peptide.

Claim 22: (previously added) A composition according to claim 21 wherein the animal is selected from a mammal or a fish.

Claim 23: (previously added) A composition according to claim 21 wherein the animal has a deficient immune system.

Claim 24: (previously added) A composition according to claim 21 wherein the disease-causing agent is selected from a pathogen, an allergen or a toxic substance.

Claim 25: (previously added) A composition according to claim 21 wherein the protection is prophylactic.

Claim 26: (previously added) A composition according to claim 21 wherein the encoded recombinant antibody is derived from an antibody raised against the disease-causing agent.

Claim 27: (canceled)

Claim 28: (previously added) A composition according to claim 21 comprising genes encoding antibody molecules to several different epitopes of the disease-causing agent.

Attorney Docket No.: **ABLE-0021**
Inventors: **Secombes et al.**
Serial No.: **10/088,780**
Filing Date: **July 22, 2002**
Page 9

Claim 29: (previously added) A composition according to claim 21 comprising a gene-expression library encoding antibodies to the disease-causing agent.

Claim 30: (previously added) A composition according to claim 29 wherein the gene expression library encodes single-chain antibody molecules to the disease-causing agent.

Claim 31: (previously added) A composition according to claim 21 wherein the encoded recombinant antibody is a virus-neutralising antibody.

Claim 32: (previously added) A composition according to claim 31 wherein the encoded virus-neutralising antibody is single chain molecule.

Claim 33: (currently amended) A composition according to claim 21 including a nucleic acid construct encoding a viral haemorrhagic septicaemia virus VHSV-neutralising monoclonal antibody 3F1H10 with two amino ~~acids~~ ~~substituents~~ acid substitutions in the H-chain gene respectively Asn 35a to Thr and Lys 64 to Thr and with the secretion signal of rainbow trout transforming growth factor (TGF-beta) added to the 5' end of the gene.

Claim 34: (previously added) A composition according to claim 26 wherein when the disease-causing agent is an allergen

Attorney Docket No.: **ABLE-0021**
Inventors: **Secombes et al.**
Serial No.: **10/088,780**
Filing Date: **July 22, 2002**
Page 10

the antibody molecule is derived from an antibody raised against IgE molecules.

Claim 35:(previously added) A composition according to claim 21 wherein the nucleic acid construct is formed from DNA.

Claim 36:(previously added) A composition according to claim 21 wherein the composition is in the form of a vaccine, dosage form, cream, ointment, liquid or paint.

Claim 37:(previously added) A composition according to claim 36 wherein the composition is for delivery by injection, spray or gene gun.

Claim 38:(currently amended) A composition for protection of a fish against a disease-causing agent, the composition comprising a non-infectious DNA construct encoding a viral haemorrhagic septicaemia virus VHSV-neutralising monoclonal antibody 3F1H10 with two amino acids~~-substituents~~ acid substitutions in the H-chain gene respectively Asn 35a to Thr and Lys 64 to Thr and with the secretion signal of rainbow trout transforming growth factor (TGF-beta) added to the 5' end of the gene.

Claim 39:(previously added) A composition according to claim 38 wherein the protection is prophylactic.

Claim 40:(previously added) A composition according to claim

Attorney Docket No.: **ABLE-0021**
Inventors: **Secombes et al.**
Serial No.: **10/088,780**
Filing Date: **July 22, 2002**
Page 11

38 wherein the encoded antibody molecule comprises variable domains of immunoglobulin Heavy and Light chain genes linked together by a linker sequence.

Claim 41:(canceled)

Claim 42:(previously added) A composition according to claim 38 wherein the composition is in the form of a vaccine, dosage form, cream, ointment, liquid or paint.

Claim 43:(previously added) A composition according to claim 38 wherein the composition is for delivery by injection, spray or gene gun.

Claim 44:(previously added) A method of treating an animal comprising administering thereto a composition according to claim 1.

Claim 45:(previously added) A method according to claim 44, wherein said composition mediates expression of a recombinant antibody to the pathogen, allergen or toxin.

Claim 46:(previously added) A method of treating an animal comprising administering thereto a composition according to claim 3.

Claim 47:(previously added) A method of treating an animal comprising administering thereto a composition according to claim 6.

Attorney Docket No.: **ABLE-0021**
Inventors: **Secombes et al.**
Serial No.: **10/088,780**
Filing Date: **July 22, 2002**
Page 12

Claim 48:(previously added) A method of treating an animal comprising administering thereto a composition according to claim 21.

Claim 49:(previously added) A method of treating a fish comprising administering thereto a composition according to claim 38.

Claim 50:(currently amended) A method of treating an animal with a congenital or acquired ~~immunodefficiency~~ immunodeficiency, comprising administration of a number of non-infectious nucleic acid constructs encoding antibodies against a spectrum of disease-causing agents.

Claim 51:(previously added) A method according to claim 44, wherein said animal is a fish or another aquatic animal.

Claim 52:(previously added) A method according to claims 44, wherein said animal is a mammal.

Claim 53:(previously added) A method according to claim 52, wherein said mammal is a human.

Claim 54:(previously added)A method according to claim 50, wherein said animal is a human.